



BUREAU OF AIR POLLUTION CONTROL

901 South Stewart Street, Suite 4001 • Carson City, NV 89701-5249
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Facility ID No. A0394

Permit No. AP1041-2250

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: ROUND MOUNTAIN GOLD CORPORATION – SMOKY VALLEY COMMON OPERATION (hereinafter referred to as **Permittee**)

Mailing Address: P.O. Box 480, ROUND MOUNTAIN, NEVADA 89045

Physical Address: #1 SMOKY VALLEY MINE ROAD, ROUND MOUNTAIN, NEVADA 89045

General Facility Location: SECTIONS 1, 2, and 3, T 9N, R 43E
 SECTION 6, T 9N, R 44E
 SECTIONS 13, 14, 23 – 26, and 34 – 36, T 10N, R 43E
 SECTIONS 17 – 20, and 29 – 31, T 10N, R 44E
 MDB&M (HA 137B BIG SMOKY VALLEY, NORTHERN PART), NYE COUNTY
 NORTH 4,284.39 KM, EAST 491.18 KM, UTM ZONE 11 – NAD 83

Thermal Unit List: (12 Thermal Units)

A. System 25 – Carbon Regeneration

TU	4.001	Carbon Reactivation Kiln, Manufactured by Bartlett-Snow, Serial # Unknown
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B. System 24 – Refinery

TU	4.005	Electric Induction Furnace, Manufactured by Inductotherm, Serial # 22320-4-88
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C. System GH 09 – Gold Hill Carbon Kiln

TU	4.006	Carbon Reactivation Kiln, Summit Valley Equipment and Engineering (SVE&E), Serial # USP8CR001
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D. System GH 10 – Gold Hill Carbon Stripping

TU	4.007	Pregnant Tank, Manufactured by SVE&E, Serial # Unknown
TU	4.008	Barren Tank, Manufactured by SVE&E, Serial # Unknown
TU	4.009	Electrowinning Cells, Manufactured by SVE&E, Serial # Unknown

E. System GH 11 – Gold Hill Retort

TU	4.010	Retort, Manufactured by SVE&E, Serial # 2308480MR001 & 002
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F. System GH 12 – Gold Hill Furnace

TU	4.011	Smelting Furnace, Manufactured by Inductotherm, Serial # Unknown
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G. System 35 – ADR Carbon Stripping Circuit

TU	4.002	Pregnant Solution Tank, Manufactured by Unknown, Serial # Unknown
TU	4.003	Barren Solution Tank 1, Manufactured by Unknown, Serial # Unknown
TU	4.004	Barren Solution Tank 2, Manufactured by Unknown, Serial # Unknown
TU	4.012	Electrowinning Cells, Manufactured by Unknown, Serial # Unknown (formerly DM 3.001)



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Section I. General Conditions

The Permittee must comply with, but is not limited to, all conditions of Nevada Administrative Code (NAC) 445B.3611-3689 “Nevada Mercury Air Emissions Control Program”, inclusive.

A. Records Retention. NAC 445B.3679.2(a)

The Permittee of a Mercury Operating Permit to Construct shall retain records of all required monitoring data and support information for (5) years after the date of the sample collection, measurement, report or analysis. Supporting information includes, without limitation, all records regarding calibration and maintenance of the monitoring equipment and all original strip-chart recordings for continuous monitoring instrumentation.

B. Severability. NAC 445B.3679.2(b)

Each of the conditions and requirements of the Mercury Operating Permit to Construct is severable and, if any are held invalid, the remaining conditions and requirements continue in effect.

C. Compliance/Noncompliance. NAC 445B.3679.2(c)

The Permittee must comply with all conditions of the Mercury Operating Permit to Construct. Any noncompliance constitutes a violation and is grounds for:

1. An action for noncompliance;
2. The revoking and reissuing, or the terminating of the Mercury Operating Permit to Construct by the Director; or
3. The reopening or revising of the Mercury Operating Permit to Construct by the holder of the Mercury Operating Permit to Construct as directed by the Director.

D. Defense to Noncompliance. NAC 445B.3679.2(d)

The need to halt or reduce activity to maintain compliance with the conditions of the Mercury Operating Permit to Construct is not a defense to noncompliance with any conditions of the Mercury Operating Permit to Construct.

E. Cause. NAC 445B.3679.2(e)

The Director may revise, revoke and reissue, reopen and revise, or terminate the Mercury Operating Permit to Construct for cause.

F. Property Rights/Exclusive Privilege. NAC 445B.3679.2(f)

The Mercury Operating Permit to Construct does not convey any property rights or any exclusive privilege.

G. Information Request from Director. NAC 445B.3679.2(g)

The Permittee shall provide the Director, in writing and within a reasonable time, with any information that the Director requests to determine whether cause exists for revoking or terminating the Mercury Operating Permit to Construct or to determine compliance with the conditions of this Mercury Operating Permit to Construct.

H. Right to Entry. NAC 445B.3679.2(h)

The Permittee shall allow the Director or any authorized representative of the Director, upon the presentation of credentials, to:

1. Enter upon the premises of *the Permittee* where:
 - a. The thermal unit that emits mercury is located;
 - b. Activity related to mercury emissions is conducted; or
 - c. Records are kept pursuant to the conditions of the Mercury Operating Permit to Construct.
2. Have access to and copy, during normal business hours, any records that are kept pursuant to the conditions of the Mercury Operating Permit to Construct;
3. Inspect, at reasonable times, any facilities, practices, operations, or equipment, including any equipment for monitoring or controlling air pollution, that are regulated or required pursuant to the Mercury Operating Permit to Construct; and
4. Sample or monitor, at reasonable times, substances or parameters to determine compliance with the conditions of the Mercury Operating Permit to Construct or applicable requirements.



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Section I. General Conditions (continued)

I. Certify True and Accurate. NAC 445B.3679.2(i)

A responsible official of the stationary source shall certify that, based on information and belief formed after reasonable inquiry, the statements made in any document required to be submitted by any condition of the Mercury Operating Permit to Construct are true, accurate and complete.

J. Yearly Reporting. NAC 445B.3679.3(b, c, d)

The Permittee will submit yearly reports including, but not limited to, throughput, production, fuel consumption, hours of operation, emissions and mercury co-product. These reports will be submitted on the form provided by the Bureau of Air Pollution Control for all emission units/systems specified on the form. The completed form must be submitted to the Bureau of Air Pollution Control no later than March 1 annually for the preceding calendar year, unless otherwise approved by the Bureau of Air Pollution Control.

K. Facilities Operation. NAC 445B.227

The Permittee may not:

1. Operate a stationary source of air pollution unless the control equipment for air pollution that is required by applicable requirements or conditions of the Mercury Operating Permit to Construct are installed and operating.
2. Disconnect, alter, modify or remove any of the control equipment for air pollution or modify any procedure required by an applicable requirement or condition of the Mercury Operating Permit to Construct.

L. Excess Emissions. NAC 445B.232

1. Scheduled maintenance or testing or scheduled repairs which may result in excess emissions of regulated air pollutants prohibited by NAC 445B.001 to 445B.3689, inclusive, must be approved by the Director and performed during a time designated by the Director as being favorable for atmospheric ventilation.
2. The Director must be notified in writing of the time and expected duration at least 24 hours in advance of any scheduled maintenance which may result in excess emissions of regulated air pollutants prohibited by NAC 445B.001 to 445B.3689, inclusive.
3. The Director must be notified in writing or by telephone of the time and expected duration at least 24 hours in advance of any scheduled repairs which may result in excess emissions of regulated air pollutants prohibited by NAC 445B.001 to 445B.3689, inclusive.
4. The Director must be notified of any excess emissions within 24 hours after any malfunction or upset of the process equipment or equipment for controlling pollution or during startup or shutdown of such equipment. The telephone number for the notification is (775) 687-9350.
5. **The Permittee**, as the owner or operator of an affected facility, shall provide the Director, within 15 days after any malfunction, upset, startup, shutdown, or human error which results in excess emissions, sufficient information to enable the Director to determine the seriousness of the excess emissions. The information must include at least the following:
 - a. The identity of the stack or other point of emission, or both, where the excess emissions occurred.
 - b. The estimated magnitude of the excess emissions expressed in units of the applicable limitation on emission and the operating data and methods used in estimating the magnitude of the excess emissions.
 - c. The time and duration of the excess emissions.
 - d. The identity of the equipment causing the excess emissions.
 - e. If the excess emissions were the result of a malfunction, the steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of the malfunction.
 - f. The steps taken to limit the excess emissions.
 - g. Documentation that the equipment for controlling air pollution, process equipment, or processes were at all times maintained and operated, to a maximum extent practicable, in a manner consistent with good practice for minimizing emissions.



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Section I. General Conditions (continued)

M. Construction Requirements: New, or Modified Thermal Units. NAC 445B.250

The Permittee shall provide the Director written notification of:

1. The date that construction or reconstruction of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply to mass-produced facilities which are purchased in completed form.
2. The anticipated date of initial startup of an affected facility, postmarked not more than 60 days and not less than 30 days prior to such date.
3. The actual date of initial startup of an affected facility, postmarked within 15 days after such date.

N. Annual Testing.

Before the conclusion of each calendar year, ***the Permittee*** shall:

1. Conduct and record a Method 29 (or alternative test method approved by the Director) compliance test for mercury on the exhaust stack of Systems 24 and 25 consisting of three valid runs. Each of the three test runs must collect a sample volume of 1.7 dry standard cubic meters (60 dscf) or be conducted for up to two hours in an effort to collect this sample volume (NAC 445B.3679.3).
2. Simultaneously, during the Method 29 (or alternative test method approved by the Director) compliance test, conduct and record a material assay from Systems 24 and 25. One representative sample shall be taken for each test run. Total mercury content shall be determined using EPA Method 7471B (cold vapor atomic adsorption analysis) (or alternative test method approved by the Director) (NAC 445B.3679.3).
3. Conduct tests of performance under such conditions as the Director specifies to the operator of the plant based on representative performance of the affected facility. The owner or operator shall make available to the Director such records as may be necessary to determine the conditions of the test of performance. Operations during periods of startup, shutdown and malfunction must not constitute representative conditions of a test of performance unless otherwise specified in the applicable standard (NAC 445B.252.3).
4. Give notice to the Director 30 days before the test of performance to allow the Director to have an observer present. A written testing procedure for the test of performance must be submitted to the Director at least 30 days before the test of performance to allow the Director to review the proposed testing procedures (NAC 445B.252.4).
5. Furnish the Director within 60 days after completing the performance tests a written and electronic report of the results of the performance tests. All information and analytical results of testing and sampling must be certified as to the truth and accuracy and as to their compliance with NAC 445B.001 to 445B.3689 (NAC 445B.252.8).

O. SIP Article 2.5.4 Federally Enforceable SIP Requirement.

Breakdown or upset, determined by the Director to be unavoidable and not the result of careless or marginal operations, shall not be considered a violation of these regulations.

P. Expiration and Extension. NAC 445B.3687

1. If construction will occur in one phase, a mercury operating permit to construct for a new or modified thermal unit that emits mercury expires if construction is not commenced within 18 months after the date of issuance thereof or construction of the thermal unit that emits mercury is delayed for 18 months after initiated. The Director may extend the date on which the construction may be commenced upon a showing that the extension is justified.
2. If construction will occur in more than one phase, the projected date of the commencement of construction of each phase of construction must be approved by the Director. A mercury operating permit to construct expires if the initial phase of construction is not commenced within 18 months after the projected date of the commencement of construction approved by the Director. The Director may extend only the date on which the initial phase of construction may be commenced upon a showing that the extension is justified.



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Section I. General Conditions (continued)

Q. Construction Requirements NAC 445B.250

1. The NvMACT for **TU 4.001 through TU 4.005 each** must be implemented not later than 24 months after the issuance date of this mercury operating permit to construct (NAC 445B.3679.3(a)(2)(I)).
 - a. The issuance date for **TU 4.001 through TU 4.005** is **November 14, 2011**.
2. Construction on **Systems GH09, GH10, GH11, and GH12** must commence within 18 months after the issuance date of this permit. The issuance date for **Systems GH09, GH10, GH11, and GH12** is **November 14, 2011**. The NvMACT for **Systems GH09, GH10, GH11, and GH12 each** must be implemented upon startup.
3. Construction on **TU 4.002 through TU 4.004 and TU 4.012** must commence within 18 months after the issuance date of this permit. The issuance date for **TU 4.002 through TU 4.004 and TU 4.012** is **March xx, 2014**. The NvMACT for **TU 4.002 through TU 4.004 and TU 4.012** must be implemented upon startup.
4. The **Permittee** shall provide the Director written notification of:
 - a. The date of implementation of NvMACT for **TU 4.001 through TU 4.005 each** pursuant to NAC 445B.3679.3(a)(2)(I) postmarked within 15 days after such date (NAC 445B.3679.2(g)).

R. Annual Reporting

The Permittee shall:

1. Report mercury co-product on an annual basis (NAC 445B.3679(3)(d)).
2. Report the level of mercury emissions on an annual basis, which must be based on mercury emissions test data (NAC 445B.3679(3)(c)).

******* End of General Conditions *******



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Section II. Specific Operating Conditions

A. Thermal Units #TU 4.001 location North 4,283.53 km, East 490.94 km, UTM (Zone 11)

A. System 25 – Carbon Regeneration

TU	4.001	Carbon Reactivation Kiln, Manufactured by Bartlett-Snow, Serial # Unknown
<p><u>Description of Stack parameters</u></p> <ul style="list-style-type: none">i. Height: 25.17 ft.ii. Diameter: 0.688 ft.iii. Stack temperature: approximately 185°Fiv. Flow: Maximum volume flow rate of 700 dry standard cubic feet per minute (dscfm).		

1. Air Pollution Equipment

- a. Exhaust gases from TU 4.001 shall be ducted to a control system with 100% capture consisting of:
 - i. **Wet Scrubber (WS-001)** (*manufacturer by Clean Gas Systems*)
 - ii. **Carbon Deep Bed Scrubber (CA-001)** (*manufactured by Scotia International of Nevada*)

2. Operating Requirements

- a. Limitations of operation. NAC 445B.3679.3
 - i. The maximum allowable throughput rate of **carbon** from CIL circuit for TU 4.001 shall not exceed **0.5 ton** per any one-hour period.
 - ii. The interim mercury emission limit during the demonstration period for establishment of the final mercury emission limit as established in Section II.A.3.e for TU 4.001 shall not exceed **5.0 x 10⁻³** grains per dry standard cubic foot (gr/dscf).
 - iii. **TU 4.001** may operate simultaneously.
 - iv. Hours
TU 4.001 may operate a total of **8,760** hours per calendar year.



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Section II. Specific Operating Conditions (continued)

A. Thermal Units # TU 4.001 (continued)

b. Work practices. NAC 445B. 3679.3

i. Carbon Kiln (TU 4.001)

(a) Visually inspect the drum lining of TU 4.001 for structural damage and cracks biannually.

ii. Wet Scrubber (WS-001)

(a) The water flow rate of WS-001 shall be maintained at or above 12 gallons per minute.

(b) The differential pressure across WS-001 shall be maintained between 1 and 10 inches of water.

iii. Carbon Deep Bed Scrubber (CA-001)

(a) The maximum exhaust gas temperature at the discharge of the inline heater prior to CA-001 shall not exceed 185°F.

(b) CA-001 shall contain no less than 5,000 pounds of sulfur-impregnated carbon.

(c) The differential pressure across CA-001 shall not exceed 10 inches of water.

(d) Replace all of the sulfur-impregnated carbon in CA-001 according to the following schedule:

- i. The sulfur-impregnated carbon in CA-001 shall be sampled 90 days after the notification of the implementation of NvMACT for TU 4.001. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon no later than 30 days after reaching 90% of the carbon loading capacity. The required mercury analysis shall be performed utilizing one of the following methods:

1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
3. An alternative test method as approved in advance by the Director.

(e) Any sulfur-impregnated carbon replaced in CA-001 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing carbon.

(f) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CA-001 shall be kept on site.



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Section II. Specific Operating Conditions (continued)

A. Thermal Units # TU 4.001 (continued)

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B. 3679.3)

a. Compliance Testing

Within 180 days of the implementation of NvMACT for TU 4.001 as required in Section I.Q, the *Permittee* shall conduct and record a performance test for mercury on the exhaust stack of TU 4.001 consisting of three valid runs utilizing US EPA Method 29 of 40 CFR part 60 Appendix A.

b. Monitoring

The *Permittee*, upon implementation of NvMACT for TU 4.001 shall:

- i. Prior to implementation of NvMACT for TU 4.001, install, operate, calibrate, and maintain instrumentation to measure and record the following:
 - (a) The water flow rate of WS-001 in gallons per minute.
 - (b) The differential pressure of WS-001 in inches of water.
 - (c) The inline heater outlet gas temperature prior to CA-001 in degrees Fahrenheit.
 - (d) The differential pressure across CA-001 in inches of water.
- ii. Monitor the total daily hours of operation for TU 4.001.
- iii. Monitor the total daily throughput rate of carbon from CIL circuit for TU 4.001 in tons.
- iv. Monitor the water flow rate for WS-001 in gallons per minute once per day during operation.
- v. Monitor the differential pressure across WS-001 in inches of water once per day during operation.
- vi. Monitor the inline heater outlet gas temperature prior to CA-001 in degrees Fahrenheit once per day during operation.
- vii. Monitor the differential pressure across CA-001 in inches of water once per day during operation.
- viii. Monitor the sulfur-impregnated carbon in CA-001 for percentage of mercury by weight, quarterly until reaching 50 percent of the carbon loading capacity and then monthly until reaching 90 percent of the carbon loading capacity.

c. Recordkeeping

The required monitoring, established in Section A.3.b.i through viii, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- i. The calendar date of any required monitoring.
- ii. The total daily hours of operation for TU 4.001, for the corresponding date.
- iii. The total daily throughput rate of carbon from CIL circuit for TU 4.001 in tons, for the corresponding date.
- iv. The water flow rate for WS-001 in gallons per minute once per day, during operation, for the corresponding date.
- v. The differential pressure across WS-001 in inches of water once per day, during operation, for the corresponding date.
- vi. The inline heater outlet gas temperature prior to CA-001 in degrees Fahrenheit once per day, during operation, for the corresponding date.
- vii. The differential pressure across CA-001 in inches of water once per day during operation, for the corresponding date.
- viii. The percentage of mercury by weight of the sulfur-impregnated carbon in CA-001 from the mercury analysis, for the corresponding date.
- ix. The depth of the sample location in CA-001 from the mercury analysis, for the corresponding date.
- x. The date, time, and weight of each sulfur-impregnated carbon replacement for CA-001, for the corresponding date.
- xi. The inspection for TU 4.001 bi-annually for the corresponding date.
- xii. The corresponding average hourly throughput rate for TU 4.001 in tons per hour. The average hourly throughput rate will be determined from the total daily throughput rate (iii) and the total daily hours of operation (ii) above.



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Section II. Specific Operating Conditions (continued)

A. Thermal Units # TU 4.001 (continued)

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. For this Operating Permit to Construct, prompt is defined as submittal of a report within 15 days of said deviation. This definition does not alter any reporting requirements as established for reporting of excess emissions as required under NAC 445B.232 and under condition I.L. of this permit.

e. Performance Testing

- i. Upon the date of implementation of NvMACT, **the Permittee**, shall begin a performance demonstration period for the establishment of a mercury emissions limit for System 25 which shall consist of (6) consecutive Method 29 source tests at approximate 6-month intervals. The performance demonstration period shall provide emissions data for the establishment of a final NvMACT mercury emission limit for each thermal unit.
- ii. **The Permittee** shall submit a test protocol and receive NDEP protocol approval for each performance demonstration test. Performance tests must be performed at conditions that the Director deems representative of normal operations. Only NDEP-validated tests may be used for the establishment of a final NvMACT mercury emission limit for System 25.
- iii. **The Permittee** shall provide in each validated performance test report the records of all operating parameters and work practice standards required in the Phase-2 Mercury Operating Permit to Construct as monitored and recorded during each corresponding test of performance. Material sampling must be performed pursuant to the NDEP approved protocol.
- iv. Within 30-days of receiving a complete stack test report, the Director shall complete a review of the stack test report and provide written notification to **the Permittee** with determination of applicability for the performance demonstration, pursuant to the NDEP approved test protocol.
- v. The final NvMACT mercury emission limit shall be calculated as the maximum test value from the (6) corresponding NDEP-validated performance demonstration tests plus one standard deviation in gr/dscf mercury. The standard deviation value shall be calculated from the (6) corresponding NDEP-validated performance demonstration test values.
- vi. The final NvMACT mercury emission limit shall be the applicable mercury emission limit permit requirement for the Phase-2 Mercury Operating Permit to Construct expressed as gr/dscf mercury.
- vii. A validated performance demonstration test may be used for the purpose of annual mercury emissions testing.



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Section II. Specific Operating Conditions

B. Thermal Unit # TU 4.005 location North 4,283.51 km, East 490.91 km, UTM (Zone 11)

B. System 24 – Refinery

TU	4.005	Electric Induction Furnace, Manufactured by Inductotherm, Serial # 22320-4-88
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Description of Stack Parameters

- i. Height: 25.17 ft.
- ii. Diameter: 0.646 ft.
- iii. Stack temperature: approximately 185°F
- iv. Flow: Maximum volume flow rate of 2,233 dry standard cubic feet per minute (dscfm).

1. Air Pollution Equipment

- a. Exhaust gases from TU 4.005 shall be ducted to a control system with 100% capture consisting of:
 - i. **Wet Scrubber (WS-002)** (*manufacturer by Clean Gas Systems*)
 - ii. **Carbon Deep Bed Scrubber (CA-002)** (*manufactured by Scotia International of Nevada*)

2. Operating Requirements

- a. Limitations of Operation NAC 445B.3679.3
 - i. The maximum allowable throughput rate of **precious metal precipitate** for TU 4.005, shall not exceed **0.38 ton per batch**. “Precious metal precipitate” shall consist only of the following:
 - (a) Material loaded with precious metals such as gold and silver, along with various other metals that is produced by electrowinning, the Merrill-Crowe process, flotation and gravity separation processes, and other gold concentration or precipitation processes.
 - (b) Material collected from the wash-down of any equipment or surfaces contacted with precious metals that have been concentrated through the various concentration methods employed by precious metal mines.
 - (c) Material containing precious metals collected from the wet scrubber.
 - ii. The interim mercury emission limit during the demonstration period for establishment of the final mercury emission limit as established in Section II.B.3.e for TU 4.005 shall not exceed **5.0 x 10⁻³** grains per dry standard cubic foot (gr/dscf).
 - iii. Hours
TU 4.005 may operate a total of **8,760** hours per calendar year.
- b. Work Practice Standards NAC 445B.3679.3
 - i. **Wet Scrubber (WS-002)**
 - (a) The water flow rate of WS-002 shall be maintained at or above **12** gallons of per minute.
 - (b) The differential pressure across WS-002 shall be maintained between **1 and 10** inches of water.



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Section II. Specific Operating Conditions (continued)

B. Thermal Unit # TU 4.005 (continued)

ii. Carbon Deep Bed Scrubber (CA-002)

- (a) The maximum exhaust gas temperature at the discharge of the inline heater prior to **CA-002** shall not exceed **185°F**.
- (b) **CA-002** shall contain no less than **5,000** pounds of sulfur-impregnated carbon.
- (c) The differential pressure across **CA-002** shall not exceed **10** inches of water.
- (d) Replace all of the sulfur-impregnated carbon in **CA-002** according to the following schedule:
 - i. The sulfur-impregnated carbon in **CA-002** shall be sampled 90 days after the notification of the implementation of NvMACT for **TU 4.005**. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon no later than 30 days after reaching 90% of the carbon loading capacity. The required mercury analysis shall be performed utilizing one of the following methods:
 - 1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 - 2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 - 3. An alternative test method as approved in advance by the Director.
- (e) Any sulfur-impregnated carbon replaced in **CA-002** shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing carbon.
- (f) The original manufacturer's design specifications for the sulfur-impregnated carbon used in **CA-002** shall be kept on site.

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3379.3)

a. Compliance Testing

Within 180 days of the notification of implementation of NvMACT for **TU 4.005** as required in Section I.Q, the *Permittee* shall conduct and record a performance test for mercury on the exhaust stack of **TU 4.005** consisting of three valid runs utilizing US EPA Method 29 of 40 CFR part 60 Appendix A.



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Section II. Specific Operating Conditions (continued)

B. Thermal Unit # TU4.005 (continued)

b. Monitoring

The **Permittee**, upon implementation of the NvMACT for **TU 4.005** shall:

- i. Prior to implementation of NvMACT for **TU 4.005**, install, operate, calibrate, and maintain instrumentation to measure and record the following.
 - (a) The water flow rate of **WS-002** in gallons per minute.
 - (b) The differential pressure of **WS-002** in inches of water.
 - (c) The inline heater outlet gas temperature prior to **CA-002** in degrees Fahrenheit.
 - (d) The differential pressure across **CA-002** in inches of water.
- ii. Monitor the total batch weight of precious metal precipitate for **TU 4.005** in tons, per batch.
- iii. Monitor the daily hours of operation per batch for **TU 4.005**.
- iv. Monitor the water flow rate for **WS-002** in gallons per minute once per batch during operation.
- v. Monitor the differential pressure across **WS-002** in inches of water once per batch during operation.
- vi. Monitor the inline heater outlet gas temperature prior to **CA-002** in degrees Fahrenheit once per batch during operation.
- vii. Monitor the differential pressure across **CA-002** in inches of water once per batch during operation.
- viii. Monitor the sulfur-impregnated carbon in **CA-002** for percentage of mercury by weight, quarterly until reaching 50 percent of the carbon loading capacity and then monthly until reaching 90 percent of the carbon loading capacity.

c. Recordkeeping

The required monitoring, established in Section B.3.b.i through vii., shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- i. The calendar date of any required monitoring.
- ii. The total batch weight of **precious metal precipitate** for **TU 4.005**, in tons, for the corresponding date.
- iii. The daily hours of operation per batch for **TU 4.005**, during each day of operation.
- iv. The water flow rate for **WS-002** in gallons per minute once per batch, during operation, for the corresponding date.
- v. The differential pressure across **WS-002** in inches of water once per batch, during operation, for the corresponding date.
- vi. The inline heater outlet gas temperature prior to **CA-002** in degrees Fahrenheit once per batch, during operation, for the corresponding date.
- vii. The differential pressure across **CA-002** in inches of water once per batch during operation, for the corresponding date.
- viii. The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-002** from the mercury analysis, for the corresponding date.
- ix. The depth of the sample location in **CA-002** from the mercury analysis, for the corresponding date.
- x. The date, time, and weight of each sulfur-impregnated carbon replacement for **CA-002**, for the corresponding date.

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. For this Operating Permit to Construct, prompt is defined as submittal of a report within 15 days of said deviation. This definition does not alter any reporting requirements as established for reporting of excess emissions as required under NAC 445B.232 and under condition I.L. of this permit.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0394

Permit No. AP1041-2250

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

B. Thermal Unit # TU 4.005 (continued)

e. Performance Testing

- i. Upon the date of implementation of NvMACT, *the Permittee*, shall begin a performance demonstration period for the establishment of a mercury emissions limit for **TU4.005**, which shall consist of (6) consecutive Method 29 source tests at approximate 6-month intervals. The performance demonstration period shall provide emissions data for the establishment of a final NvMACT mercury emission limit for each thermal unit.
- ii. *The Permittee* shall submit a test protocol and receive NDEP protocol approval for each performance demonstration test. Performance tests must be performed at conditions that the Director deems representative of normal operations. Only NDEP-validated tests may be used for the establishment of a final NvMACT mercury emission limit for **TU4.005**.
- iii. *The Permittee* shall provide in each validated performance test report the records of all operating parameters and work practice standards required in the Phase-2 Mercury Operating Permit to Construct as monitored and recorded during each corresponding test of performance. Material sampling must be performed pursuant to the NDEP approved protocol.
- iv. Within 30-days of receiving a complete stack test report, the Director shall complete a review of the stack test report and provide written notification to *the Permittee* with determination of applicability for the performance demonstration, pursuant to the NDEP approved test protocol.
- v. The final NvMACT mercury emission limit shall be calculated as the maximum test value from the (6) corresponding NDEP-validated performance demonstration tests plus one standard deviation in gr/dscf mercury. The standard deviation value shall be calculated from the (6) corresponding NDEP-validated performance demonstration test values.
- vi. The final NvMACT mercury emission limit shall be the applicable mercury emission limit permit requirement for the Phase-2 Mercury Operating Permit to Construct expressed as gr/dscf mercury.
- vii. A validated performance demonstration test may be used for the purpose of annual mercury emissions testing.



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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions

C. Thermal Unit # TU 4.006 location North 4,290.22 km, East 493.87 km, UTM (Zone 11)

C. System GH 09 – Gold Hill Carbon Kiln

TU	4.006	Carbon Reactivation Kiln, Manufactured by Summit Valley Equipment and Engineering (SVE&E), Serial # USP8CR001
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Description of Stack parameters

- i. Height: 48.88ft
- ii. Diameter: 0.48ft
- iii. Stack temperature: approximately 150°F
- iv. Flow: Maximum volume flow rate of 95 dry standard cubic feet per minute (dscfm).

1. Air Pollution Equipment

- a. Exhaust gases from TU 4.006 shall be ducted to a control system with 100% capture consisting of:
 - i. **Condenser (MC-001)** (*manufacturer by ALFA LAVAL*)
 - ii. **Carbon Deep Bed Scrubber (CA-003)** (*manufactured by SVE&E*)

2. Operating Requirements

- a. Limitations of operation. NAC 445B.3685.3
 - i. The maximum allowable throughput rate of **carbon** from CIL circuit for TU 4.006 shall not exceed **0.25 ton** per any one-hour period.
 - ii. The interim mercury emission limit during the demonstration period for establishment of the final mercury emission limit as established in Section II.C.3.e for TU 4.006 shall not exceed **5.0 x 10⁻³** grains per dry standard cubic foot (gr/dscf).
 - iii. Hours
TU 4.006 may operate a total of **8,760** hours per calendar year.
- b. Work practices. NAC 445B. 3685.3
 - i. Carbon Kiln (TU 4.006)
 - (a) Visually inspect the drum lining of TU 4.006 for structural damage and cracks biannually.
 - ii. Condenser (MC-001)
 - (a) The maximum exhaust gas temperature at the discharge of MC-001 shall not exceed **90°F**.
 - (b) TU 4.006 shall automatically shut off via interlock if the exhaust gas temperature at the discharge of MC-001 is above **125°F**.
 - (c) TU 4.006 shall automatically shut off via interlock if water flow into MC-001 is not present.
 - (d) The condensed mercury from MC-001 shall be collected monthly.



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Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

C. Thermal Units # TU 4.006 (continued)

iii. Carbon Deep Bed Scrubber (CA-003)

- (a) The maximum exhaust gas temperature at the discharge of the inline heater prior to **CA-003** shall not exceed **185°F**.
- (b) **CA-003** shall contain no less than **590** pounds of sulfur-impregnated carbon.
- (c) The differential pressure across **CA-003** shall not exceed **15 inches of water**.
- (d) Replace all of the sulfur-impregnated carbon in **CA-003** according to the following schedule:
 - i. The sulfur-impregnated carbon in **CA-003** shall be sampled within 90 days after the initial startup of **TU 4.006**. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon no later than 30 days after reaching 90% of the carbon loading capacity. The required mercury analysis shall be performed utilizing one of the following methods:
 1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 3. An alternative test method as approved in advance by the Director.
- (e) Any sulfur-impregnated carbon replaced in **CA-003** shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing carbon.
- (f) The original manufacturer's design specifications for the sulfur-impregnated carbon used in **CA-003** shall be kept on site.

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B. 3685.3)

a. Compliance Testing

Within 180 days of the initial startup of **TU 4.006** as required in Section I.Q, the *Permittee* shall conduct and record a performance test for mercury on the exhaust stack of **TU 4.006** consisting of three valid runs utilizing US EPA Method 29 of 40 CFR part 60 Appendix A.

b. Monitoring

The *Permittee* for **TU 4.006** shall:

- i. Install, operate, calibrate, and maintain instrumentation to measure and record the following:
 - (a) The water flow rate into **MC-001**, in gallons per minute.
 - (b) The outlet gas temperature **MC-001**, in degrees Fahrenheit.
 - (c) The differential pressure across **CA-003**, in inches of water.
 - (d) The inline heater outlet gas temperature prior to **CA-003** in degrees Fahrenheit.
- ii. Prior to startup of **MC-001**, install, operate, calibrate and maintain an interlock that will shut off **TU 4.006** when water flow is not present.
- iii. Prior to startup of **MC-001**, install, operate, calibrate and maintain an exhaust gas temperature interlock that will shut off the **TU 4.006** heating element if the exhaust gas from the condenser is **100° F or greater**.
- iv. Monitor the total daily hours of operation for **TU 4.006**.
- v. Monitor the total daily throughput rate of **carbon** from CIL circuit for **TU 4.006** in tons.



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Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

C. Emission Units # TU 4.006 (continued)

- vi. Monitor the outlet gas temperature of **MC-001** in degrees Fahrenheit, continuously during operation.
- vii. Monitor the mercury drained from **MC-001** in pounds, monthly
- viii. Monitor the inline heater outlet gas temperature prior to **CA-003** in degrees Fahrenheit, continuously during operation.
- ix. Monitor the differential pressure across **CA-003** in inches of water, continuously during operation.
- x. Monitor the sulfur-impregnated carbon in **CA-003** for percentage of mercury by weight, quarterly until reaching 50 percent of the carbon loading capacity and then monthly until reaching 90 percent of the carbon loading capacity.

c. Recordkeeping

The required monitoring, established in Section C.3.b.i through x, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- i. The calendar date of any required monitoring.
- ii. The total daily hours of operation for **TU 4.006**, for the corresponding date.
- iii. The total daily throughput rate of **carbon** from CIL circuit for **TU 4.006** in tons, for the corresponding date.
- iv. The outlet gas temperature of **MC-001** in degrees Fahrenheit, continuously during operation, based on a one hour period, for the corresponding date.
- v. The mercury drained from **MC-001** in pounds, monthly, for the corresponding date.
- vi. The inline heater outlet gas temperature prior to **CA-003** in degrees Fahrenheit, continuously during operating, based on a one hour period, for the corresponding date.
- vii. The differential pressure across **CA-003** in inches of water, continuously during operation, based on a one hour period, for the corresponding date.
- viii. The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-003** from the mercury analysis, for the corresponding date.
- ix. The depth of the sample location in **CA-003** from the mercury analysis, for the corresponding date.
- x. The date, time, and weight of each sulfur-impregnated carbon replacement for **CA-003**, for the corresponding date.
- xi. The inspection for **TU 4.006** bi-annually for the corresponding date.
- xii. The corresponding average hourly throughput rate for **TU 4.006** in tons per hour. The average hourly throughput rate will be determined from the total daily throughput rate (iii) and the total daily hours of operation (ii) above.

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. For this Operating Permit to Construct, prompt is defined as submittal of a report within 15 days of said deviation. This definition does not alter any reporting requirements as established for reporting of excess emissions as required under NAC 445B.232 and under condition I.L. of this permit.

e. Performance Testing

- i. Upon the date of initial startup of **TU 4.006**, **the Permittee**, shall begin a performance demonstration period for the establishment of a mercury emissions limit for each thermal unit, which shall consist of (6) consecutive Method 29 source tests at approximate 6-month intervals. The performance demonstration period shall provide emissions data for the establishment of a final NvMACT mercury emission limit for **TU 4.006**.
- ii. **The Permittee** shall submit a test protocol and receive NDEP protocol approval for each performance demonstration test. Performance tests must be performed at conditions that the Director deems representative of normal operations. Only NDEP-validated tests may be used for the establishment of a final NvMACT mercury emission limit for each **TU 4.006**.



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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

C. Emission Units # TU 4.006 (continued)

- iii. *The Permittee* shall provide in each validated performance test report the records of all operating parameters and work practice standards required in the Phase-2 Mercury Operating Permit to Construct as monitored and recorded during each corresponding test of performance. Material sampling must be performed pursuant to the NDEP approved protocol.
- iv. Within 30-days of receiving a complete stack test report, the Director shall complete a review of the stack test report and provide written notification to *the Permittee* with determination of applicability for the performance demonstration, pursuant to the NDEP approved test protocol.
- v. The final NvMACT mercury emission limit shall be calculated as the maximum test value from the (6) corresponding NDEP-validated performance demonstration tests plus one standard deviation in gr/dscf mercury. The standard deviation value shall be calculated from the (6) corresponding NDEP-validated performance demonstration test values.
- vi. The final NvMACT mercury emission limit shall be the applicable mercury emission limit permit requirement for the Phase-2 Mercury Operating Permit to Construct expressed as gr/dscf mercury.
- vii. A validated performance demonstration test may be used for the purpose of annual mercury emissions testing.



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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions

D. Thermal Units # TU 4.007 through TU 4.009 location North 4,290.22 km, East 493.88 km, UTM (Zone 11)

D. System GH 10 – Gold Hill Carbon Stripping

TU	4.007	Pregnant Tank, Manufactured by SVE&E, Serial # Unknown
TU	4.008	Barren Tank, Manufactured by SVE&E, Serial # Unknown
TU	4.009	Electrowinning Cells, Manufactured by SVE&E, Serial # Unknown

Description of Stack parameters

- i. Height: 36.5ft
- ii. Diameter: 0.63ft
- iii. Stack temperature: approximately 100°F
- iv. Flow: Maximum volume flow rate of 2,660 dry standard cubic feet per minute (dscfm).
- v. Units TU 4.007, TU 4.008, and TU 4.009 are ducted to common controls and a common exhaust stack.

1. Air Pollution Equipment

- a. Exhaust gases from TU 4.007, TU 4.008, and TU 4.009 shall be ducted to a control system with 100% capture consisting of:
 - i. Carbon Deep Bed Scrubber (CA-004) (manufactured by SVE&E)

2. Operating Requirements

- a. Limitations of operation. NAC 445B.3685.3
 - i. The maximum allowable throughput rate of precious metal solution for TU 4.007, TU 4.008 and TU 4.009, each, shall not exceed 80 gallons per minute.
 - ii. The interim mercury emission limit during the demonstration period for establishment of the final mercury emission limit as established in Section II.D.3.e for System GH 10 shall not exceed 5.0×10^{-3} grains per dry standard cubic foot (gr/dscf).
 - iii. TU 4.007, TU 4.008, and TU 4.009 may operate simultaneously.
 - iv. Hours
TU 4.007, TU 4.008, and TU 4.009 each may operate a total of 8,760 hours per calendar year.



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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

D. Thermal Units # TU 4.007 through TU 4.009 (continued)

b. Work practices. NAC 445B. 3679.3

i. Carbon Deep Bed Scrubber (CA-004)

- (a) CA-004 shall contain no less than **4,800** pounds of sulfur-impregnated carbon.
 - (b) The differential pressure across CA-004 shall not exceed **15 inches of water**.
 - (c) Replace all of the sulfur-impregnated carbon in CA-004 according to the following schedule:
 - i. The sulfur-impregnated carbon in CA-004 shall be sampled within 90 days after the initial startup of **TU 4.007, TU 4.008, and TU 4.009**. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon no later than 30 days after reaching 90% of the carbon loading capacity. The required mercury analysis shall be performed utilizing one of the following methods:
 - 1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 - 2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 - 3. An alternative test method as approved in advance by the Director.
 - (d) Any sulfur-impregnated carbon replaced in CA-004 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing carbon.
 - (e) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CA-004 shall be kept on site.
- ii. Tanks (TU 4.007 through TU 4.009)
- (a) Visually inspect tanks for structural damage and fluid leaks monthly.

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B. 3685.3)

a. Compliance Testing

Within 180 days of the initial startup of **TU 4.007, TU 4.008, and TU 4.009**, the *Permittee* shall conduct and record a performance test for mercury on the exhaust stack of **TU 4.007, TU 4.008, and TU 4.009** consisting of three valid runs utilizing US EPA Method 29 of 40 CFR part 60 Appendix A.



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Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

D. Thermal Units # TU 4.007 through TU 4.009 (continued)

b. Monitoring

The *Permittee* shall:

- i. Install, operate, calibrate, and maintain instrumentation to measure and record the following for **TU 4.007, TU 4.008, and TU 4.009**:
 - (a) The **precious metal solution** throughput rate of **TU 4.007, TU 4.008 and TU 4.009, each**, in gallons per minute.
 - (b) The differential pressure across **CA-004** in inches of water.
- ii. Monitor the total daily hours of operation for **TU 4.007**.
- iii. Monitor the throughput rate of **precious metal solution** for **TU 4.007** in gallons per minute, once per day, during operation.
- iv. Monitor the total daily hours of operation for **TU 4.008**.
- v. Monitor the throughput rate of **precious metal solution** for **TU 4.008** in gallons per minute, once per day, during operation.
- vi. Monitor the total daily hours of operation for **TU 4.009**.
- vii. Monitor the throughput rate of **precious metal solution** for **TU 4.009** in gallons per minute, once per day, during operation.
- viii. Monitor the differential pressure across **CA-004** in inches of water, continuously during operation.
- ix. Monitor the sulfur-impregnated carbon in **CA-004** for percentage of mercury by weight, quarterly until reaching 50 percent of the carbon loading capacity and then monthly until reaching 90 percent of the carbon loading capacity.

c. Recordkeeping

The required monitoring, established in Section D.3.b.i through ix, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- i. The calendar date of any required monitoring.
- ii. The total daily hours of operation for **TU 4.007**, for the corresponding date.
- iii. The throughput rate of **precious metal solution** for **TU 4.007** in gallons per minute, once per day, during operation, for the corresponding date.
- iv. The total daily hours of operation for **TU 4.008**, for the corresponding date.
- v. The throughput rate of **precious metal solution** for **TU 4.008** in gallons per minute, once per day, during operation, for the corresponding date.
- vi. The total daily hours of operation for **TU 4.009**, for the corresponding date.
- vii. The throughput rate of **precious metal solution** for **TU 4.009** in gallons per minute, once per day, during operation, for the corresponding date.
- viii. The differential pressure across **CA-004** in inches of water, continuously during operation, for the corresponding date, based on a one hour period.
- ix. The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-004** from the mercury analysis, for the corresponding date.
- x. The depth of the sample location in **CA-004** from the mercury analysis, for the corresponding date.
- xi. The date, time, and weight of each sulfur-impregnated carbon replacement for **CA-004**, for the corresponding date.
- xii. The inspections for **TU 4.007, TU 4.008, and TU 4.009** monthly for the corresponding date.



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Section II. Specific Operating Conditions (continued)

D. Thermal Units # TU 4.007 through TU 4.009 (continued)

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. For this Operating Permit to Construct, prompt is defined as submittal of a report within 15 days of said deviation. This definition does not alter any reporting requirements as established for reporting of excess emissions as required under NAC 445B.232 and under condition I.L. of this permit.

e. Performance Testing

- i. Upon the date of startup of **System GH10 the Permittee**, shall begin a performance demonstration period for the establishment of a mercury emissions limit for the system, which shall consist of (6) consecutive Method 29 source tests at approximate 6-month intervals. The performance demonstration period shall provide emissions data for the establishment of a final NmACT mercury emission limit for the system.
- ii. **The Permittee** shall submit a test protocol and receive NDEP protocol approval for each performance demonstration test. Performance tests must be performed at conditions that the Director deems representative of normal operations. Only NDEP-validated tests may be used for the establishment of a final NmACT mercury emission limit for the system.
- iii. **The Permittee** shall provide in each validated performance test report the records of all operating parameters and work practice standards required in the Phase-2 Mercury Operating Permit to Construct as monitored and recorded during each corresponding test of performance. Material sampling must be performed pursuant to the NDEP approved protocol.
- iv. Within 30-days of receiving a complete stack test report, the Director shall complete a review of the stack test report and provide written notification to **the Permittee** with determination of applicability for the performance demonstration, pursuant to the NDEP approved test protocol.
- v. The final NmACT mercury emission limit shall be calculated as the maximum test value from the (6) corresponding NDEP-validated performance demonstration tests plus one standard deviation in gr/dscf mercury. The standard deviation value shall be calculated from the (6) corresponding NDEP-validated performance demonstration test values.
- vi. The final NmACT mercury emission limit shall be the applicable mercury emission limit permit requirement for the Phase-2 Mercury Operating Permit to Construct expressed as gr/dscf mercury.
- vii. A validated performance demonstration test may be used for the purpose of annual mercury emissions testing.



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Section II. Specific Operating Conditions

E. Thermal Unit # TU 4.010 location North 4,290.22 km, East 493.90 km, UTM (Zone 11)

E. System GH 11 – Gold Hill Retort

TU	4.010	Retort, Manufactured by SVE&E, Serial # 2308480MR001 & 002
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Stack parameters

- i. Height: 14 ft.
- ii. Diameter: 0.29 ft.
- iii. Stack temperature: approximately 150°F
- iv. Flow: Maximum volume flow rate of 16 dry standard cubic feet per minute (dscfm).

1. Air Pollution Equipment

- a. Exhaust gases from TU 4.010 shall be ducted to a control system with 100% capture consisting of:
 - i. **Mercury Condenser with chiller (MC-002)** (*manufactured by SVE&E*)
 - ii. **Carbon Deep Bed Scrubber (CA-005)** (*manufactured by SVE&E*)

2. Operating Requirements

- a. Limitations of Operation NAC 445B.3679.3
 - i. The maximum allowable batch weight of **precious metal concentrate** for TU 4.010, shall not exceed **3,000 pounds per batch**. “Precious metal concentrate” shall consist only of the following:
 - (a) Material loaded with precious metals such as gold and silver, along with various other metals that is produced by electrowinning, the Merrill-Crowe process, flotation and gravity separation processes, and other gold concentration or precipitation processes.
 - (b) Material collected from the wash-down of any equipment or surfaces contacted with precious metals that have been concentrated through the various concentration methods employed by precious metal mines.
 - ii. The interim mercury emission limit during the demonstration period for establishment of the final mercury emission limit as established in Section II.E.3.e for TU 4.010 shall not exceed **5.0 x 10⁻³** grains per dry standard cubic foot (gr/dscf).
 - iii. The precious metal concentrate shall be retorted in pans specified by the retort manufacturer and not exceed the volume capacity specified by the manufacturer, per pan.
 - iv. Hours
TU 4.010 may operate a total of **8,760** hours per calendar year.



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Section II. Specific Operating Conditions (continued)

E. Thermal Unit # TU 4.010 (continued)

b. Work Practice Standards NAC 445B.3685.3

i. Retort (TU 4.010)

- (a) During heating TU 4.010 shall be placed under negative gauge pressure between 200 and 500 millimeters of mercury (mm Hg).
- (b) TU 4.010 shall automatically shut off via interlock if the negative gauge pressure is less than 200 mm Hg.

ii. Mercury Condenser (MC-002)

- (a) The maximum exhaust gas temperature at the discharge of MC-002 shall not exceed 90°F.
- (b) The condensed mercury from MC-002 shall be collected monthly.
- (c) TU 4.010 shall automatically shut off via interlock if the exhaust gas temperature at the discharge of MC-002 is above 125°F.
- (d) TU 4.010 shall automatically shut off via interlock if water flow into MC-002 is not present.

iii. Carbon Deep Bed Scrubber (CA-005)

- (a) CA-005 shall contain no less than 200 pounds of sulfur-impregnated carbon.
- (b) The differential pressure across CA-005 shall not exceed 10 inches of water.
- (c) The sulfur-impregnated carbon in CA-005 shall be sampled within 90 days after the initial startup of TU 4.010. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon no later than 30 days after reaching 90% of the carbon loading capacity. The required mercury analysis shall be performed utilizing one of the following methods:
 - 1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 - 2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 - 3. An alternative test method as approved in advance by the Director.
- (d) Any sulfur-impregnated carbon replaced in CA-005 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing carbon.
- (e) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CA-005 shall be kept on site.

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3685.3)

a. Compliance Testing

Within 180 days of initial startup of TU 4.010, the *Permittee* shall conduct and record a performance test for mercury on the exhaust stack of TU 4.010 consisting of three valid runs utilizing US EPA Method 29 of 40 CFR part 60 Appendix A.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0394

Permit No. AP1041-2250

MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

E. Thermal Unit # TU 4.010 (continued)

b. Monitoring

The *Permittee* shall:

- i. Install, operate, calibrate, and maintain instrumentation to continuously measure and record the following for **TU 4.010**.
 - (a) The negative gauge pressure of **TU 4.010**, in mmHg.
 - (b) The outlet gas temperature **MC-002**, in degrees Fahrenheit.
 - (c) The water flow rate into **MC-002**, in gallons per minute.
 - (d) The differential pressure across **CA-005**, in inches of water.
- ii. Install, operate, calibrate and maintain an interlock that will shut off **TU 4.010**'s heating element if the negative gauge pressure is less than **200 mmHg**.
- iii. Install, operate, calibrate and maintain an interlock that will shut off when the water flow is not present in **MC-002**.
- iv. Install, operate, calibrate and maintain an exhaust gas temperature interlock that will shut off the **TU 4.010** heating element if the exhaust gas from the condenser is **100°F** or greater in **MC-002**.
- v. Monitor the batch weight of **precious metal concentrate** for **TU 4.010**, in pounds, for each batch.
- vi. Monitor the daily hours of operation per batch for **TU 4.010**, during each day of operation.
- vii. Monitor the negative vacuum gauge pressure for **TU 4.010** in mmHg, continuously during operation.
- viii. Monitor the outlet gas temperature **MC-002** in degrees Fahrenheit, continuously during operation.
- ix. Monitor the mercury drained from **MC-002** in pounds, monthly.
- x. Monitor the differential pressure across the **CA-005** in inches of water, continuously during operation.
- xi. Monitor the sulfur-impregnated carbon in **CA-005** for percentage of mercury by weight, quarterly until reaching 50% of the carbon loading capacity and then monthly until reaching 90% of the carbon loading capacity.

c. Recordkeeping

The required monitoring, established in Section E.3.b.i through xi, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- i. The calendar date of any required monitoring.
- ii. The total batch weight of **precious metal concentrate** for **TU 4.010** in tons, for the corresponding date.
- iii. The daily hours of operation per batch for **TU 4.010** for the corresponding date.
- iv. The negative vacuum gauge pressure for **TU 4.010** in mmHg, continuously during operating, based on a one hour period, for the corresponding date.
- v. The outlet gas temperature from **MC-002** in degrees Fahrenheit, continuously during operation, based on a one hour period, for the corresponding date.
- vi. The mercury drained from **MC-002** in pounds, monthly, for the corresponding date.
- vii. The differential pressure across **CA-005** in inches of water, continuously during operation, based on a one hour period, for the corresponding date.
- viii. The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-005** from the mercury analysis, for the corresponding date.
- ix. The depth of the sample probe from the carbon sampling on **CA-005** for the corresponding date.
- x. The date, time, and weight of each sulfur-impregnated carbon replacement for **CA-005**, for the corresponding date.
- xi. The date, time, and corrective action taken for an interlock shut-down, for the corresponding date.

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. For this Operating Permit to Construct, prompt is defined as submittal of a report within 15 days of said deviation. This definition does not alter any reporting requirements as established for reporting of excess emissions as required under NAC 445B.232 and under condition I.L. of this permit.



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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

E. Thermal Unit # TU 4.010 (continued)

e. Performance Testing

- i. Upon the date of initial startup of **TU 4.010**, *the Permittee*, shall begin a performance demonstration period for the establishment of a mercury emissions limit for the thermal unit, which shall consist of (6) consecutive Method 29 source tests at approximate 6-month intervals. The performance demonstration period shall provide emissions data for the establishment of a final NvMACT mercury emission limit for the thermal unit.
- ii. *The Permittee* shall submit a test protocol and receive NDEP protocol approval for each performance demonstration test. Performance tests must be performed at conditions that the Director deems representative of normal operations. Only NDEP-validated tests may be used for the establishment of a final NvMACT mercury emission limit for the thermal unit.
- iii. *The Permittee* shall provide in each validated performance test report the records of all operating parameters and work practice standards required in the Phase-2 Mercury Operating Permit to Construct as monitored and recorded during each corresponding test of performance. Material sampling must be performed pursuant to the NDEP approved protocol.
- iv. Within 30-days of receiving a complete stack test report, the Director shall complete a review of the stack test report and provide written notification to *the Permittee* with determination of applicability for the performance demonstration, pursuant to the NDEP approved test protocol.
- v. The final NvMACT mercury emission limit shall be calculated as the maximum test value from the (6) corresponding NDEP-validated performance demonstration tests plus one standard deviation in gr/dscf mercury. The standard deviation value shall be calculated from the (6) corresponding NDEP-validated performance demonstration test values.
- vi. The final NvMACT mercury emission limit shall be the applicable mercury emission limit permit requirement for the Phase-2 Mercury Operating Permit to Construct expressed as gr/dscf mercury.
- vii. A validated performance demonstration test may be used for the purpose of annual mercury emissions testing.



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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions

F. Thermal Unit # TU 4.011 location North 4,290.23 km, East 493.90 km, UTM (Zone 11)

F. System GH 12 – Gold Hill Furnace

TU	4.011	Smelting Furnace, Manufactured by Inductotherm, Serial # Unknown
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Stack parameters

- i. Height: 14 ft.
- ii. Diameter: 1.0 ft.
- iii. Stack temperature: approximately 150°F
- iv. Flow: Maximum volume flow rate of 3,500 dry standard cubic feet per minute (dscfm).

1. Air Pollution Equipment

- a. Exhaust gases from TU 4.011 shall be ducted to a control system with 100% capture consisting of:
 - i. **Baghouse (BH-001)** (*manufactured by EAS*)
 - ii. **Carbon Deep Bed Scrubber (CA-006)** (*manufactured by SVE&E*)

2. Operating Requirements

- a. Limitations of Operation NAC 445B.3685.3
 - i. The maximum allowable batch weight of **retorted precious concentrate** for TU 4.011, shall not exceed **0.5 ton per batch**. “Retorted precious metal concentrate” shall consist only of the following:
 - (a) Precious metal concentrate, as defined in E.2.a.i.(a)(b) of this section, that has been retorted.
 - (b) Dust collected from the baghouse and fume hood of TU 4.011.
 - ii. The interim mercury emission limit during the demonstration period for establishment of the final mercury emission limit as established in Section II.F.3.e for TU 4.011 shall not exceed **5.0 x 10⁻³** grains per dry standard cubic foot (gr/dscf).
 - iii. Hours
TU 4.011 may operate a total of **8,760** hours per calendar year.
- b. Work Practice Standards NAC 445B.3679.3
 - i. Furnace (TU 4.011)
 - (a) Only **retorted precious metal concentrate** shall be fed into TU 4.011.
 - (b) **BH-001** shall be operated at all times during the operation of TU 4.011 including startup and shutdown.
 - (c) The pressure differential across **BH-001** shall be maintained between 0.7 and 10 inches of water.
 - (d) Bags in **BH-001** shall be inspected quarterly for damage or leakage.



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Section II. Specific Operating Conditions (continued)

F. Thermal Unit # TU 4.011 (continued)

ii. Carbon Scrubber (CA-006)

- (a) CA-006 shall contain no less than **14,000 pounds** of sulfur-impregnated carbon.
- (b) The differential pressure across CA-006 shall not exceed 15 inches of water.
- (c) The sulfur-impregnated carbon in CA-006 shall be sampled within 90 days after the initial of startup of TU 4.011. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon no later than 30 days after reaching 90% of the carbon loading capacity. The required mercury analysis shall be performed utilizing one of the following methods:
 1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 3. An alternative test method as approved in advance by the Director.
- (d) Any sulfur-impregnated carbon replaced in CA-006 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing carbon.
- (e) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CA-006 shall be kept on site.

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B.3379.3)

a. Compliance Testing

Within 180 days of the initial startup of TU 4.011, the *Permittee* shall conduct and record a performance test for mercury on the exhaust stack of TU 4.011 consisting of three valid runs utilizing US EPA Method 29 of 40 CFR part 60 Appendix A.

b. Monitoring

The *Permittee* shall:

- i. Install, operate, calibrate, and maintain instrumentation to continuously measure and record the following, for TU 4.011.
 - (a) The differential pressure across BH-001 in inches of water.
 - (b) The differential pressure across CA-006 in inches of water.
- ii. Monitor the batch weight of **retorted precious metal concentrate** for TU 4.011, in tons, for each batch.
- iii. Monitor the daily hours of operation per batch for TU 4.011, during each day of operation.
- iv. Monitor the differential pressure across BH-001 in inches of water, continuously during operation.
- v. Monitor the differential pressure across the CA-006 in inches of water, continuously during operation.
- vi. Monitor the sulfur-impregnated carbon in CA-006 for percentage of mercury by weight, quarterly until reaching 50% of the carbon loading capacity and then monthly until reaching 90% of the carbon loading capacity.



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Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

F. Thermal Unit # TU 4.011 (continued)

c. Recordkeeping

The required monitoring, established in Section F.3.b.i through vi, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- i. The calendar date of any required monitoring.
- ii. The total batch weight of **retorted precious metal concentrate** for **TU 4.011** in tons, for the corresponding date.
- iii. The daily hours of operation per batch for **TU 4.011**, for the corresponding date.
- iv. The differential pressure across **BH-001** in inches of water, continuously during operation, based on a one hour period, for the corresponding date.
- v. The bag inspections for **BH-001**, quarterly, for the corresponding date.
- vi. The differential pressure across **CA-006** in inches of water, continuously during operation, based on a one hour period, for the corresponding date.
- vii. The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-006** from the mercury analysis, for the corresponding date.
- viii. The depth of the sample probe from the carbon sampling on **CA-006** for the corresponding date.
- ix. The date, time, and weight of each sulfur-impregnated carbon replacement for **CA-006**, for the corresponding date.

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. For this Operating Permit to Construct, prompt is defined as submittal of a report within 15 days of said deviation. This definition does not alter any reporting requirements as established for reporting of excess emissions as required under NAC 445B.232 and under condition I.L. of this permit.

e. Performance Testing

- i. Upon the date of initial startup of **TU 4.011** operations, **the Permittee**, shall begin a performance demonstration period for the establishment of a mercury emissions limit for each thermal unit, which shall consist of (6) consecutive Method 29 source tests at approximate 6-month intervals. The performance demonstration period shall provide emissions data for the establishment of a final NvMACT mercury emission limit the thermal unit.
- ii. **The Permittee** shall submit a test protocol and receive NDEP protocol approval for each performance demonstration test. Performance tests must be performed at conditions that the Director deems representative of normal operations. Only NDEP-validated tests may be used for the establishment of a final NvMACT mercury emission limit the thermal unit.
- iii. **The Permittee** shall provide in each validated performance test report the records of all operating parameters and work practice standards required in the Phase-2 Mercury Operating Permit to Construct as monitored and recorded during each corresponding test of performance. Material sampling must be performed pursuant to the NDEP approved protocol.
- iv. Within 30-days of receiving a complete stack test report, the Director shall complete a review of the stack test report and provide written notification to **the Permittee** with determination of applicability for the performance demonstration, pursuant to the NDEP approved test protocol.
- v. The final NvMACT mercury emission limit shall be calculated as the maximum test value from the (6) corresponding NDEP-validated performance demonstration tests plus one standard deviation in gr/dscf mercury. The standard deviation value shall be calculated from the (6) corresponding NDEP-validated performance demonstration test values.



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Section II. Specific Operating Conditions (continued)

F. Thermal Unit # TU 4.011 (continued)

- vi. The final NvMACT mercury emission limit shall be the applicable mercury emission limit permit requirement for the Phase-2 Mercury Operating Permit to Construct expressed as gr/dscf mercury.
- vii. A validated performance demonstration test may be used for the purpose of annual mercury emissions testing..

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BUREAU OF AIR POLLUTION CONTROL

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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions

G. Thermal Units # TU 4.002 through TU 4.004 and TU 4.012 location North 4,283.525 km, East 490.945 km, UTM (Zone 11)

G. System 35 – ADR Carbon Stripping Circuit

TU	4.002	Pregnant Solution Tank, Manufactured by Unknown, Serial # Unknown
TU	4.003	Barren Solution Tank 1, Manufactured by Unknown, Serial # Unknown
TU	4.004	Barren Solution Tank 2, Manufactured by Unknown, Serial # Unknown
TU	4.012	Electrowinning Cells, Manufactured by Unknown, Serial # Unknown (formerly DM 3.001)

Description of Stack parameters

- i. Height: 40 ft.
- ii. Diameter: 1.96 ft.
- iii. Stack temperature: approximately 150°F
- iv. Flow: Maximum volume flow rate of 4,400 dry standard cubic feet per minute (dscfm).
- v. Units TU 4.002, TU 4.003, TU 4.004 and TU 4.012 are ducted to common controls and a common exhaust stack.

1. Air Pollution Equipment

- a. Exhaust gases from TU 4.002, TU 4.003, TU 4.004 and TU 4.012 shall be ducted to a control system with 100% capture consisting of:
 - i. **Sulfur-Impregnated Carbon Filter (CA-007)** (manufactured by Scotia International of Nevada, Inc.)

2. Operating Requirements

- a. Limitations of operation. NAC 445B.3685.3
 - i. The maximum allowable throughput rate of **precious metal solution** for TU 4.002, TU 4.003, TU 4.004 and TU 4.012, each, shall not exceed **80 gallons** per minute.
 - ii. The interim mercury emission limit during the demonstration period for establishment of the final mercury emission limit as established in Section II.G.3.e for **System 35** shall not exceed **5.0 x 10⁻³** grains per dry standard cubic foot (gr/dscf).
 - iii. TU 4.002, TU 4.003, TU 4.004 and TU 4.012 may operate simultaneously.
 - iv. Hours
TU 4.002, TU 4.003, TU 4.004 and TU 4.012 each may operate a total of **8,760** hours per calendar year.



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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

G. Thermal Units # TU 4.002 through TU 4.004 and TU 4.012 (continued)

b. Work practices. NAC 445B. 3679.3

i. Sulfur-Impregnated Carbon Filter (CA-007)

- (a) CA-007 shall contain no less than **3,000** pounds of sulfur-impregnated carbon.
- (d) The differential pressure across CA-007 shall not exceed **15 inches of water**.
- (e) Replace all of the sulfur-impregnated carbon in CA-007 according to the following schedule:
 - i. The sulfur-impregnated carbon in CA-007 shall be sampled within 90 days after the initial startup of **TU 4.002, TU 4.003, TU 4.004 and TU 4.012**. The depth of the sample probe will be recorded. Using this sample, the percentage of mercury by weight shall be calculated. If more than one sample is taken, calculate an average carbon loading from the samples. Sampling will continue quarterly, at the same sample depth until 50% of the carbon loading capacity is reached. Upon reaching 50% of the carbon loading capacity, sampling of the carbon will occur monthly until 90% of the carbon loading capacity is reached. The carbon will be replaced with an equivalent performing sulfur-impregnated carbon no later than 30 days after reaching 90% of the carbon loading capacity. The required mercury analysis shall be performed utilizing one of the following methods:
 - 1. EPA method 6020-Inductively Coupled Plasma-Mass Spectrometry;
 - 2. EPA method 7471B- Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique); or
 - 3. An alternative test method as approved in advance by the Director.
 - (d) Any sulfur-impregnated carbon replaced in CA-007 shall be replaced with only the original manufacturer's design specification sulfur-impregnated carbon or with equivalent performing carbon.
 - (e) The original manufacturer's design specifications for the sulfur-impregnated carbon used in CA-007 shall be kept on site.
- ii. Tanks (TU 4.002 through TU 4.004)
 - (b) Visually inspect tanks for structural damage and fluid leaks monthly.

3. Compliance Testing, Monitoring, Recordkeeping and Reporting (NAC 445B. 3685.3)

a. Compliance Testing

Within 180 days of the initial startup of **TU 4.002, TU 4.003, TU 4.004 and TU 4.012**, the *Permittee* shall conduct and record a performance test for mercury on the exhaust stack of **TU 4.002, TU 4.003, TU 4.004 and TU 4.012** consisting of three valid runs utilizing US EPA Method 29 of 40 CFR part 60 Appendix A.



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Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

G. Thermal Units # TU 4.002 through TU 4.004 and TU 4.012 (continued)

b. Monitoring

The *Permittee* shall:

- i. Install, operate, calibrate, and maintain instrumentation to measure and record the following for **TU 4.002, TU 4.003, TU 4.004 and TU 4.012**:
 - (a) The **precious metal solution** throughput rate of **TU 4.002, TU 4.003, TU 4.004 and TU 4.012, each**, in gallons per minute.
 - (b) The differential pressure across **CA-007** in inches of water.
- ii. Monitor the total daily hours of operation for **TU 4.002**.
- iii. Monitor the throughput rate of **precious metal solution** for **TU 4.002** in gallons per minute, once per day, during operation.
- iv. Monitor the total daily hours of operation for **TU 4.003**.
- v. Monitor the throughput rate of **precious metal solution** for **TU 4.003** in gallons per minute, once per day, during operation.
- vi. Monitor the total daily hours of operation for **TU 4.004**.
- vii. Monitor the throughput rate of **precious metal solution** for **TU 4.004** in gallons per minute, once per day, during operation.
- viii. Monitor the total daily hours of operation for **TU 4.012**.
- ix. Monitor the throughput rate of **precious metal solution** for **TU 4.012** in gallons per minute, once per day, during operation.
- x. Monitor the differential pressure across **CA-007** in inches of water, continuously during operation.
- xi. Monitor the sulfur-impregnated carbon in **CA-007** for percentage of mercury by weight, quarterly until reaching 50 percent of the carbon loading capacity and then monthly until reaching 90 percent of the carbon loading capacity.

c. Recordkeeping

The required monitoring, established in Section G.3.b.i through xi, shall be maintained in a contemporaneous log containing, at a minimum, the following recordkeeping:

- i. The calendar date of any required monitoring.
- ii. The total daily hours of operation for **TU 4.002**, for the corresponding date.
- iii. The throughput rate of **precious metal solution** for **TU 4.002** in gallons per minute, once per day, during operation, for the corresponding date.
- iv. The total daily hours of operation for **TU 4.003**, for the corresponding date.
- v. The throughput rate of **precious metal solution** for **TU 4.003** in gallons per minute, once per day, during operation, for the corresponding date.
- vi. The total daily hours of operation for **TU 4.004**, for the corresponding date.
- vii. The throughput rate of **precious metal solution** for **TU 4.004** in gallons per minute, once per day, during operation, for the corresponding date.
- viii. The total daily hours of operation for **TU 4.012**, for the corresponding date.
- ix. The throughput rate of **precious metal solution** for **TU 4.012** in gallons per minute, once per day, during operation, for the corresponding date.
- x. The differential pressure across **CA-007** in inches of water, continuously during operation, for the corresponding date, based on a one hour period.
- xi. The percentage of mercury by weight of the sulfur-impregnated carbon in **CA-007** from the mercury analysis, for the corresponding date.
- xii. The depth of the sample location in **CA-007** from the mercury analysis, for the corresponding date.
- xiii. The date, time, and weight of each sulfur-impregnated carbon replacement for **CA-007**, for the corresponding date.
- xiv. The inspections for **TU 4.002, TU 4.003, TU 4.004 and TU 4.012** monthly for the corresponding date.



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Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section II. Specific Operating Conditions (continued)

G. Thermal Units # TU 4.002 through TU 4.004 and TU 4.012 (continued)

d. Reporting

Permittee will promptly report to the Director any deviations from the requirements of the Operating Permit to Construct. The report to the Director will include probable cause of all deviations and any action taken to correct deviations. For this Operating Permit to Construct, prompt is defined as submittal of a report within 15 days of said deviation. This definition does not alter any reporting requirements as established for reporting of excess emissions as required under NAC 445B.232 and under condition I.L. of this permit.

e. Performance Testing

- i. Upon the date of startup of **System 3x the Permittee**, shall begin a performance demonstration period for the establishment of a mercury emissions limit for the system, which shall consist of (6) consecutive Method 29 source tests at approximate 6-month intervals. The performance demonstration period shall provide emissions data for the establishment of a final NmACT mercury emission limit for the system.
- ii. **The Permittee** shall submit a test protocol and receive NDEP protocol approval for each performance demonstration test. Performance tests must be performed at conditions that the Director deems representative of normal operations. Only NDEP-validated tests may be used for the establishment of a final NmACT mercury emission limit for the system.
- iii. **The Permittee** shall provide in each validated performance test report the records of all operating parameters and work practice standards required in the Phase-2 Mercury Operating Permit to Construct as monitored and recorded during each corresponding test of performance. Material sampling must be performed pursuant to the NDEP approved protocol.
- iv. Within 30-days of receiving a complete stack test report, the Director shall complete a review of the stack test report and provide written notification to **the Permittee** with determination of applicability for the performance demonstration, pursuant to the NDEP approved test protocol.
- v. The final NmACT mercury emission limit shall be calculated as the maximum test value from the (6) corresponding NDEP-validated performance demonstration tests plus one standard deviation in gr/dscf mercury. The standard deviation value shall be calculated from the (6) corresponding NDEP-validated performance demonstration test values.
- vi. The final NmACT mercury emission limit shall be the applicable mercury emission limit permit requirement for the Phase-2 Mercury Operating Permit to Construct expressed as gr/dscf mercury.
- vii. A validated performance demonstration test may be used for the purpose of annual mercury emissions testing.

***** End of Specific Operating Conditions *****



BUREAU OF AIR POLLUTION CONTROL

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MERCURY OPERATING PERMIT TO CONSTRUCT: PHASE 2

Issued to: Smokey Valley Common Operation – Round Mountain Gold Corporation

Section III. Amendments

February xx, 2014 – Aircase ID 7743 – MOPTC Modification – AK – Round Mountain Gold submitted a MOPTC modification for the following revisions:

- System 25 – Carbon Regeneration
 - Stack parameters were updated.
 - Removal of solution tanks from system and created System 35.
- System GH 09 – Gold Hill Carbon Kiln
 - Work practice standards and monitoring were changed due to last year's temperature reports. The maximum exhaust temperature was changed from 75°F to 90°F. The interlock shut off temperature was changed from 90°F to 125°F.
 - Stack parameters were updated.
- System GH 10 – Gold Hill Carbon Stripping
 - Throughput rate was increased from 60 gal/min to 80 gal/min no resizing of control was needed.
 - Stack parameters were updated.
- System GH 11 – Gold Hill Retort
 - Work practice standards and monitoring were changed due to last year's temperature reports. The maximum exhaust temperature was changed from 75°F to 90°F. The interlock shut off temperature was changed from 90°F to 125°F.
 - Stack parameters were updated.
- System GH 12 – Gold Hill Furnace
 - Differential Pressure across the BH-001 was changed from 1 to 10 inches of water to 0.7 to 10 inches of water.
 - Stack parameters were updated.
- System 35 – ADR Carbon Stripping Circuit
 - Added TU 4.002 through TU 4.004 to System 35.
 - Added TU 4.012, Electrowinning Cells to System 35.

This permit:

1. Is non-transferable. (NAC 445B.287.3)
2. Will be posted conspicuously at or near the stationary source. (NAC 445B.318.5)
3. Any party aggrieved by the Department's decision to issue this permit may appeal to the State Environmental Commission (SEC) within ten days after the date of notice of the Department's action. (NRS 445B.340)

Signature: _____

Issued by: Jonathan McRae, P.E.
Supervisor, Permitting Branch
Bureau of Air Pollution Control

Phone: (775) 687-9337

Date: March xx, 2014